

## REMARKS

Claims 1-34 are pending in the application. Claims 9-30 are withdrawn from consideration (see below). Claims 1-8 and 31-34 stand rejected. Claims 31-34 have been amended to correct their numbering. No new matter has been added as a result of the amendments.

### Response to Restriction Requirement

The Examiner has required restriction between claims 1-8 and 31-34 in Group I, drawn to electrospun mesoporous fibers, classified in class 428, subclass 364, and claims 9-30 in Group II, drawn to a method, classified in class 264, subclass 10.

Applicants elect the claims in Group I with traverse.

The Commissioner may require restriction if two or more independent and distinct inventions are claimed in a single application (37 CFR 1.142(a)). In the present case, although the claimed subject matter may be classified in different classes, the inventions are not independent. The claims in Group I are directed to a mesoporous composition, i.e., electrospun mesoporous fibers. The claims in Group II are directed to a method of making electrospun mesoporous fibers. The scope of the composition claims in Group I is equivalent to the scope of the method claims in Group II. As such, there is no additional burden on the part of the Patent Office to keep the claims of Group I together with the claims of Group II.

According to MPEP § 803, if the search and examination of patent claims can be made without serious burden, the examiner must examine it on the merits, **even though the application includes claims to independent or distinct inventions** (emphasis added). For this reason, Applicants respectfully request the withdrawal of the restriction requirement between Groups I and II, as there is no additional burden to search and examine the two groups of claims.

### Response to Rejection of Claims under 35 USC § 102

The pending claims are rejected under 35 USC § 102(b) as being anticipated by Martin '908, Martin '706 and Martin '331, and under 35 USC § 102(e) as being anticipated by Simpson or Layman. Applicants respectfully disagree with the Examiner's analysis and respond as

follows:

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). An element of a claim is not "inherent" in the disclosure of a prior art reference unless extrinsic evidence clearly shows that "the missing descriptive matter is necessarily present in the thing described in reference, and that it would be so recognized by persons of ordinary skill." *In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999). In fact, inherency "may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.*

Martin '908, '331 and '706 teach a process for making polymer fibers by electrospinning. **None of these references** teach the use of mesoporous precursor materials (defined in the specification as materials used in the synthesis of **molecular sieves**). Indeed, neither the term "mesoporous" nor "molecular sieve" are recited anywhere in the specification or claims of Martin '908, '331 and '706. The very purpose of this invention (as discussed in the background) is directed towards developing a method for electrospinning solutions containing mesoporous materials and to generate electrospun fibers containing mesoporous materials. The Examiner has failed to show that the prior art anticipates the claimed invention.

In addition, there are numerous differences between the methods used in Martin '908, '331 and '706 for fiber formation and the fibers resulting therefrom, and the methods and compositions of the claimed invention. The low solubility and poor fiber forming properties of the polymers used in Martin '908, '331 and '706 require a "polymer additive" to solubilize and promote fiber formation. Examples of this "polymer additive" include polyethyleneoxide a non-surfactant to help form the fibers and the related polyethyleneoxideoctylephenylether (Triton X100) to solubilize the Teflon particles. Additionally, the polymer solution viscosity as taught by Martin '908 must be below 150 poise ('908 col 5, line 47), whereas the gel viscosities of the claimed invention are several orders of magnitude greater than that. Furthermore, the use of a surfactant in the claimed invention is not a solubilizing agent (as is the case in Martin '908, '331 and '706) but rather as a template. The self assembly of the surfactant causes the formation of a micelle around which the metal oxide condenses to form the uniform pores of the molecular

sieve fiber. The polymer fibers prepared by Martin '908, '331 and '706 are neither porous nor do they possess a high surface area like the fibers of the claimed invention.

Furthermore, Martin '331 teaches the inclusion of a wettable additive to the polymer fibers for wettable applications. Specifically metal oxides and hydroxides are cited as additive for the polymer. These forms of the metals would not work in the claimed invention since the claimed invention requires a soluble gel form of the metal. It is well known that many different particles can be included in electrospun polymer fibers ranging from inorganic particles to carbon nanotubes. In no way is this analogous to the molecular sieve fibers in the claimed invention nor could one generate a molecular sieve fiber from a polymer containing inorganic additives.

Similarly, neither Simpson nor Layman recite methods for or compositions resulting from the electrospinning of mesoporous precursor materials. The presence of mesoporous materials is an element of the claimed invention and the absence of the recitation of this claimed element in any of the cited references indicates that the Examiner has failed to show that the prior art anticipates the claimed invention.

All of the cited references recite the use of additives (surfactants or inorganics) included in a polymer solution that either solubilize the polymer, promote fiber formation or affect the properties of the final polymer fiber. The claimed invention does not use any additives or processing aids. In addition, the surfactant is used as a template (see Working Examples, page 14, line 16) to introduce uniform pore structure, and is not used to solubilize the material being electrospun, aid in fiber formation or affect the molecular sieve fiber properties.

In conclusion, none of the cited references recite each and every element of the claimed invention. Therefore, the invention is not anticipated under 35 USC § 102(b) by Martin '908, Martin '706 and Martin '331, or under 35 USC § 102(e) by Simpson or Layman

## CONCLUSION

The Applicant has addressed all of the issues raised by the Examiner. If any questions or issues remain in the resolution of which the Examiner feels will be advanced by a conference with the Applicant's attorney, the Examiner is invited to contact the attorney at the number noted below.

The three-month period for a response expires on May 17, 2004. Since this Response is filed within the three-month time limit, no extension of time is necessary. Therefore, no fees are due in connection with this Response. However, if any fees are due, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account 10-0447, reference number 46847-000021USPT.

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